AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

Claim 1 (currently amended): A method of obtaining a tomographic image of part of an animal or a part of an animal including a human being or a part of a human being by using radioactive radiation, wherein the animal is at least partly placed into a measuring cavity having an axial axis, the measuring cavity being at least partially surrounded by a cavity wall which is provided with a plurality of pinholes, and wherein behind the pin holes (as viewed from the measuring cavity or lumen) detection means are placed, radioactive radiation from a radioactive isotope administered to the animal is detected in a position-related manner by the detection means and data obtained with the detection means are used for the generation of the tomographic image, wherein:

- the pinholes are at least substantially arranged in a plurality of flat planes which planes are at least substantially parallel and separated in the direction of the axial axis relative to each other wherein the distance between ~~neighbouring~~ neighboring planes is smaller than the distance between ~~neighbouring~~ neighboring pinholes within such a plane wherein distance between neighboring planes is at least 1.03, at least 1.05, at least 1.3, more specifically at least 2, preferably at least 5 or more preferably a least 10 times smaller than the distance between neighboring pinholes within any of such planes; or

- the pinholes are at least substantially arranged along a helix wherein the pitch of the helix is generally smaller than the distance between ~~neighbouring~~

neighboring pinholes laying on the helix wherein the pitch of the helix is generally at least 1.03, at least 1.05, at least 1.3, more specifically at least 2, preferably at least 5 or more preferably at least 10 times smaller than the distance between neighboring pinholes laying along the helix.

Claim 2 (currently amended): An apparatus for obtaining a tomographic image of a human being or part of a human being or an animal or a part thereof using radioactive radiation, which apparatus comprises a measuring cavity having an axial axis, a cavity wall which at least partly surrounds the measuring cavity which cavity wall is provided with a plurality of pinholes, the apparatus further comprising detection means which viewed from the cavity, are provided behind the pin holes, wherein the detection means are arranged for receiving, in a position-related manner, the radioactive radiation emitted within the measuring cavity and wherein the detection means can be read electronically or optically, wherein:

-the pinholes are at least substantially arranged in a plurality of flat planes which planes are at least substantial parallel and separated in the direction of the axial axis relative to each other wherein the distance between neighbouring planes is smaller than the distance between ~~neighbouring~~ neighboring pinholes within any of such planes wherein distance between neighboring planes is at least 1.03, at least 1.05, at least 1.3, more specifically at least 2, preferably at least 5 or more preferably a least 10 times smaller than the distance between neighboring pinholes within any of such planes; or

-the pinholes are substantially arranged along a helix wherein the pitch of the helix is generally smaller than the distance between ~~neighbouring~~ neighboring pinholes laying on the helix wherein the pitch of the helix is generally at least 1.03, at least 1.05, at least 1.3, more specifically at least 2, preferably at least 5 or more preferably at least 10 times smaller than the distance between neighboring pinholes laying along the helix.

Claim 3 (cancelled)

Claim 4 (currently amended): An apparatus according to claim ~~3~~ 2, wherein the cavity wall is of a rotationally symmetrical design around the axial axis of the measuring cavity.

Claim 5 (previously presented): An apparatus according to claim 4, wherein the cavity wall has a shape of a cylinder.

Claim 6 (previously presented): An apparatus according to claim 4, wherein the cavity wall has a polygonal cross section in a direction perpendicular to the axial axis.

Claim 7 (previously presented): An apparatus according to claim 6, wherein polygonal cross section comprises n angles (n greater than or equal to 3).

Claim 8 (previously presented): An apparatus according to claim 7, wherein the cavity wall comprises a number of at least substantially flat wall segments having the pinholes.

Claim 9 (previously presented): An apparatus according to claim 8, wherein the cavity wall comprises n wall segments.

Claim 10 (previously presented): An apparatus according to claim 8, wherein the wall segments have a rectangular shape.

Claim 11 (previously presented): An apparatus according to claim 10, wherein pinholes that are located relatively close to the ribs of the polygonal measuring cavity are at an angle to the normal of the wall segment, thereby pointing in the direction of the axial axis.

Claim 12 (currently amended): An apparatus according to claim 11, wherein the distance between two ~~neighbouring~~ neighboring pinholes laying in one of said planes or on said helix and laying relatively close to one of the ribs of the polygonal measuring cavity is greater than the distance between two ~~neighbouring~~ neighboring pinholes laying in the one of said planes or on said helix and laying substantially in the middle between two adjacent ribs.

Claim 13 (previously presented): An apparatus according to claim 12, wherein respective pinholes situated nearer the axial ends of the measuring cavity are at an angle to the normals of the wall segment near the respective pinholes thereby at least substantially pointing in the direction of the absolute center of the measuring cavity or in the direction of a line segment at least substantially extending through the absolute center of the measuring cavity in the direction of the axial axis wherein said line segment is substantially shorter than the length of the measuring cavity in the direction

of the axial axis , for example shorter than 50%, preferably shorter than 30% and more preferably shorter than 15% of the length of the measuring cavity in the direction of the axial axis.

Claim 14 (currently amended): An apparatus according to ~~any preceding~~ claim 13, wherein an edge directed in the axial direction of at least one of the wall segments is adjacent to a selectable portion of a ~~neighbouring~~ neighboring wall segment said portion being directed in the direction of the axial axis and being directed to the measuring cavity so that the diameter of the measuring cavity can be varied by selecting the distance between said portion of said ~~neighbouring~~ neighboring wall segment and an edge directed in the direction of the axial axis of said ~~neighbouring~~ neighboring wall segment and/or that the detection means comprises a plurality of substantially flat detectors wherein an edge directed in the direction of the axial axis of at least one of the detectors is adjacent to a selectable portion of a ~~neighbouring~~ neighboring detector said portion being directed in the direction of the axial axis and being directed to the measuring cavity so that the diameter of a cavity formed by the detectors can be varied by selecting the distance between said portion of said ~~neighbouring~~ neighboring wall detector and an edge directed in the direction of the axial axis of said ~~neighbouring~~ neighboring detector.

Claim 15 (previously presented): An apparatus according to claim 14, wherein the apparatus is further provided with radiation blocking means which partly block radiation which travels from the measuring cavity through at least one of the pinholes to the detection means such that the radiation which is detected by the detection means

lays in a limited solid angle relative to the at least one pinhole, which angle is smaller than the solid angle which would have been obtained without the radiation blocking means.

Claim 16 (previously presented): An apparatus according to claim 15, wherein the detection means comprises a plurality of detector arrays wherein the radiation blocking means are arranged such that each detection array only receives radiation coming from one of the pinholes.

Claim 17 (currently amended): An apparatus according to claim 16, wherein the radiation blocking means comprises baffles.

Claim 18 (previously presented): An apparatus according to claim 17, wherein the baffles are located inside the measuring cavity.

Claim 19 (previously presented): An apparatus according to claim 18, wherein the baffles are located adjacent the cavity wall.

Claim 20 (previously presented): An apparatus according to claim 17, wherein the baffles are located outside the measuring cavity.

Claim 21 (previously presented): An apparatus according to claim 20, wherein the baffles are arranged between the cavity wall and the detection means.

Claim 22 (previously presented): An apparatus according to claim 21, wherein the baffles are adjacent the cavity wall.

Claim 23 (previously presented): An apparatus according to claim 21, wherein the baffles are adjacent the detection means.

Claim 24 (previously presented): An apparatus according to claim 23, wherein the baffles each lay substantially in a plane through said axial axis.

Claim 25 (previously presented): An apparatus according to claim 24, wherein the baffles are provided with projecting elements having a direction component parallel to a surface of the detection means.

Claim 26 (currently amended): An apparatus according to claim 15 wherein the radiation blocking means comprise a blocking wall extending between the cavity wall and the detection means wherein said blocking wall comprises a plurality of openings for providing a passage for the radiation from the pinholes to the detection means laying within said limited solid angle.

Claim 27 (previously presented): An apparatus according to claim 26, wherein the openings of the blocking wall have a surface which is greater than the surface of the pinholes.

Claim 28 (currently amended): An apparatus according to claim 26 ~~or 27,~~ wherein each opening of the blocking wall corresponds with one of the pinholes such that the radiation which passes through one of the openings comes from a single one of the pinholes.

Claim 29 (previously presented): An apparatus according to claim 28, wherein the blocking wall has a shape which is substantially similar to the shape of the cavity wall.

Claim 30 (currently amended): An apparatus according to claim 29, wherein the blocking wall comprises at least substantially flat wall segments having the openings wherein an edge directed in the direction of the axial axis of at least one of the wall segments is adjacent to a selectable portion of a ~~neighbouring~~ neighboring wall segment said portion being directed in the direction of the axial axis and being directed to the measuring cavity so that the diameter of a space which is at least partly surrounded by the blocking wall and which space comprises the measuring cavity can be varied by selecting the distance between said portion of said ~~neighbouring~~ neighboring wall segment and an edge directed in the direction of the axial axis of said ~~neighbouring~~ neighboring wall segment.

Claim 31 (previously presented): An apparatus according to claim 30, wherein the blocking wall is of a rotationally symmetrically design around the axial axis of the measuring cavity.

Claim 32 (previously presented): An apparatus according to claim 31, wherein the blocking wall has a polygonal cross section in a direction perpendicular to the axial axis.

Claim 33 (previously presented): An apparatus according to claim 32, wherein polygonal cross section comprises n angles (n greater than or equal to 3).

Claim 34 (previously presented): An apparatus according to claim 33, wherein the blocking wall comprises n wall segments and/or that the detection means comprises n detectors.

Claim 35 (currently amended): An apparatus for obtaining a tomographic image of a human being or part of a human being or an animal or a part thereof using radioactive radiation, which apparatus comprises a measuring cavity having an axial axis, a cavity wall which at least partly surrounds the measuring cavity which cavity wall is provided with a plurality of pinholes, the apparatus further comprising detection means which viewed from the cavity, are provided behind the pinholes, where the detection means are arranged for, in a position-dependent manner, the detection of radioactive radiation emitted within the measuring cavity and the detection means can be read electronically or optically, wherein the cavity wall comprises at least substantially flat wall segments having the pinholes wherein an edge directed in the direction of the axial axis of at least one of the wall segments is adjacent to a selectable portion of a ~~neighbouring~~ neighboring wall segment said portion being directed in the direction of the axial axis and being directed to the measuring cavity so that the diameter of the measuring cavity can be varied by selecting the distance between said portion of said ~~neighbouring~~ neighboring wall segment and an edge directed in the direction of the axial axis of said ~~neighbouring~~ neighboring wall segment and/or wherein ~~that~~ the detection means comprises a plurality of substantially flat detectors wherein an edge, directed in the direction of the axial axis, of at least one of the detectors is adjacent to a selectable portion of a ~~neighbouring~~ neighboring detector said portion being directed in the direction of the axial axis and being directed to the measuring

cavity so that the diameter of a cavity formed by the detectors can be varied by selecting the distance between said portion of said ~~neighbouring~~ neighboring wall detector and an edge directed in the direction of the axial axis of said ~~neighbouring~~ neighboring detector, wherein the cavity wall is of a rotational symmetrical design around the axial axis of the measuring cavity and wherein the cavity wall has a polygonal cross section in a direction perpendicular to the axial axis.

Claim 36 (cancelled)

Claim 37 (cancelled)

Claim 38 (currently amended): An apparatus according to claim ~~37~~ 35, wherein the polygonal cross section comprises n angles (n greater than or equal to 3).

Claim 39 (previously presented): An apparatus according to claim 38, wherein the cavity wall comprises n wall segments and/or that the detection means comprises n detectors.

Claim 40 (previously presented): An apparatus according to claim 39, wherein pinholes that are located nearer the ribs of the polygonal measuring cavity are at an angle to the normal of the wall segment in the direction of the axial axis.

Claim 41 (previously presented): An apparatus according to claim 40, wherein pinholes laying substantial in a plane perpendicular to the axial axis and being near one of the ribs of the polygonal measuring cavity are spaced further apart than pinholes

laying substantial in the plane perpendicular to the axial axis and laying substantial in the middle between two adjacent ribs.

Claim 42 (previously presented): An apparatus according to claim 41, wherein pinholes situated relatively close to the axial ends of the measuring cavity are at an angle to the normal of the wall segment in the direction of the absolute centre of the measuring cavity.

Claim 43 (previously presented): An apparatus according to claim 42, wherein the wall segments have a rectangular shape.

Claim 44 (currently amended): An apparatus for obtaining a tomographic image of a human being or part of a human being or an animal or a part thereof using radioactive radiation, which apparatus comprises a measuring cavity which may have an axial axei, a cavity wall which may at least partly surround the measuring cavity which cavity wall is provided with a plurality of pinholes, the apparatus further comprising detection means which viewed from the measuring cavity, are provided behind the pin holes, wherein the detection means are arranged for in a position-dependent manner the detection of radioactive radiation emitted within the measuring cavity wherein the detection means can be read electronically or optically, wherein the apparatus is further provided with radiation blocking means which partly block radiation which travels from the measuring cavity through at least one of the pinholes to the detection means such that the radiation which is detected by the detection means lays in a limited solid angle relative to the at least one pinhole, which angle is smaller than the solid angle which would have been obtained without the radiation blocking means,

wherein the radiation blocking means comprise a blocking wall extending between the cavity wall and the detection means wherein said blocking wall comprises a plurality of openings for providing a passage for the radiation from the pinholes to the detection means laying within said limited solid angle, and

wherein the openings of the blocking wall have a surface which is greater than the surface of the pinholes.

Claim 45 (previously presented): An apparatus according to claim 44, wherein the detection means comprise a detector arrays wherein the radiation blocking means are arranged such that each detector array only receives radiation coming from one of the pinholes.

Claim 46 (previously presented): An apparatus according to claim 45, wherein the radiation blocking means comprises baffles.

Claim 47 (currently amended): An apparatus according to claim ~~46~~ 96 wherein the baffles are located inside the measuring cavity.

Claim 48 (previously presented): An apparatus according to claim 47, wherein the baffles are located adjacent the cavity wall.

Claim 49 (previously presented): An apparatus according to claim 46, wherein the baffles are located outside the measuring cavity.

Claim 50 (previously presented): An apparatus according to claim ~~49~~, 44 wherein the baffles are arranged between the cavity wall and the detection means.

Claim 51 (previously presented): An apparatus according to claim 50, wherein the baffles are adjacent the cavity wall.

Claim 52 (previously presented): An apparatus according to claim 50, wherein the baffles are adjacent the detection means.

Claim 53 (previously presented): An apparatus according to claim 52, wherein the baffles each lay substantially in a plane through said axial axis.

Claim 54 (previously presented): An apparatus according to claim 53, wherein the baffles are provided with projecting elements having a direction component parallel to the surface of the detection means.

Claim 55 (cancelled)

Claim 56 (cancelled)

Claim 57 (currently amended): An apparatus according to claim 44 ~~56~~, wherein each opening of the blocking wall corresponds with one of the pinholes such that the radiation which passes through one of the openings comes from a single one of the pinholes.

Claim 58 (previously presented): An apparatus according to claim 57, wherein the blocking wall has a shape which is substantially similar to the shape of the wall of the measuring cavity.

Claim 59 (currently amended): An apparatus according to claim 58 wherein the blocking wall comprises at least substantially flat wall segments having the openings wherein an edge directed in the axial direction of at least one of the wall segments is adjacent to a selectable portion of a ~~neighbouring~~ neighboring wall segment said portion being directed in the direction of the axial axis and being directed to the measuring cavity so that the diameter of a space which is at least partly surrounded by the blocking wall and which space comprises the measuring cavity can be varied by selecting the distance between said portion of said ~~neighbouring~~ neighboring wall segment and an edge directed in the direction of the axial axis of said ~~neighbouring~~ neighboring wall segment.

Claim 60 (previously presented): An apparatus according to claim 59, wherein the blocking wall is of a rotationally symmetrical design around the axial axis of the measuring cavity.

Claim 61 (previously presented): An apparatus according to claim 60, wherein the blocking wall has a polygonal cross section in a direction perpendicular to the axial axis.

Claim 62 (previously presented): An apparatus according to claim 61, wherein polygonal cross section comprises n angles (n greater than or equal to 3).

Claim 63 (previously presented): An apparatus according to claim 62, wherein the blocking wall comprises n wall segments and/or that the detection means comprises n detectors.

Claim 64 (previously presented): An apparatus according to claim 63, wherein the measuring cavity has a polygonal cross section in a direction perpendicular to the axial axis and the cavity wall comprises at least substantially flat wall segments having the pinholes.

Claim 65 (previously presented): An apparatus according to claim 64, wherein pinholes that are located nearer the ribs of the polygonal measuring cavity are at an angle to the normal of the wall segment in the direction of the axial axis.

Claim 66 (currently amended): An apparatus according to claim 65, wherein ~~neighbouring~~ neighboring pinholes laying substantial in a plane perpendicular to the axial axis and being near one of the ribs of the polygonal measuring cavity are spaced further apart than ~~neighbouring~~ neighboring pinholes laying substantial in the plane perpendicular to the axial axis and laying substantial in the middle between two adjacent ribs.

Claim 67 (previously presented): An apparatus according to claim 66 wherein pinholes situated relatively close to the axial ends of the measuring cavity are at an angle to the normal of the wall segment in the direction of the absolute centre of the measuring cavity.

Claim 68 (currently amended): An apparatus according to claim 67, wherein the pinholes are distributed over the wall of the measuring cavity such that for two peripherally ~~neighbouring~~ neighboring pinholes (pinholes separated in a direction perpendicular to the axial axis) one axially ~~neighbouring~~ neighboring pinhole is situated halfway 50± 20% between the two peripheral ~~neighbouring~~ neighboring pinholes.

Claim 69 (currently amended): An apparatus according to claim 68, wherein the pinhole is rectangular.

Claim 70 (previously presented): An apparatus according to claim 69, wherein a detection means placed behind a pinhole is a detector array.

Claim 71 (previously presented): An apparatus according to claim 70, wherein a detection means Di situated behind a pinhole Pi comprises at least two detection means segments placed at an angle in relation to one another and out of plane, such that radiation from pinhole Pi reaching the detection means segment will on average have a more perpendicular line of incidence than if they were placed in a plane wherein i= 1, 2, 3, ...n wherein n is the total number of pinholes.

Claim 72 (previously presented): An apparatus according to claim 71, wherein a detection means Di situated behind a pinhole Pi has a curved surface, such that the radiation from pinhole Pi will on average have a more perpendicular line of incidence onto each part of the detection means Di wherein i= 1, 2, 3, ...n wherein n is the total number of pinholes.

Claim 73 (cancelled)

Claim 74 (currently amended): An apparatus for obtaining a tomographic image of a human being or part of a human being or an animal or a part thereof using radioactive radiation, which apparatus comprises a measuring cavity provided with a plurality of pinholes, the measuring cavity being arranged to at least partly surround the animal where, viewed from the lumen, detection means D are provided behind the pin holes, where the detection means D are suitable for in a position-dependent manner detecting radioactive radiation and that the detection means D can be read electronically or optically, wherein the wall of the measuring cavity possesses an array of pinholes, wherein the axial component of the distance between two in axial direction ~~neighbouring~~ neighboring pinholes is smaller than the transversal component of the distance between two ~~neighbouring~~ neighboring pinholes located in transversal direction with respect to the axial direction, in that a pinhole P_1 has a maximum angle of incidence αi with respect to the normal and a detection means Di located behind that pinhole, and in that means comprising baffles are provided to limit the chance that via pinhole Pi radiation reaches any detection means D other than detection means Di,

wherein the baffles are oriented towards the lumen of the measuring cavity,

wherein the baffles are mounted on, around, or up against the surface of the detection means,

wherein the baffles are provided with projecting elements having a direction component parallel to the surface of the detection means.

and wherein the pinholes are distributed over the wall of the measuring cavity such that for two peripherally neighboring pinholes one axially neighboring pinhole is situated halfway ±20% between the two peripheral neighboring pinholes.

Claim 75 (cancelled)

Claim 76 (cancelled)

Claim 77 (cancelled)

Claim 78 (cancelled)

Claim 79 (cancelled)

Claim 80 (currently amended): An apparatus according to claim 74 ~~79,~~ wherein the pinhole is rectangular.

Claim 81 (previously presented): An apparatus claim 80, wherein a detection means placed behind a pinhole is a detector array.

Claim 82 (previously presented): An apparatus according to claim 81, wherein the measuring cavity has a polygonal cross section and the wall is divided into wall segments having pinholes.

Claim 83 (previously presented): An apparatus according to claim 82, wherein pinholes that are located nearer the ribs of the polygonal measuring cavity are at an

angle to the normal of the wall segment in the direction of the centre line of the polygonal measuring cavity.

Claim 84 (previously presented): An apparatus according to claim 82, wherein pinholes near one of the ribs of the polygonal measuring cavity are spaced further apart than pinholes nearer to the middle between two adjacent ribs.

Claim 85 (previously presented): An apparatus according to claim 84, wherein pinholes situated nearer the axial ends of the measuring cavity are at an angle to the normal of the wall segment in the direction of the absolute centre of the measuring cavity.

Claim 86 (currently amended): An apparatus according to claim 85, wherein at least 3 transversally spaced from one another and axially nearest ~~neighbouring~~ neighboring pinholes Pi are axially staggered in relation to one another.

Claim 87 (previously presented): An apparatus according to claim 86, wherein a detection means Di situated behind a pinhole Pi comprises at least two detection means segments placed at an angle in relation to one another and out of plane, such that radiation from pinhole Pi reaching the detection means segment will on average have a more perpendicular line of incidence than if they were placed in a plane.

Claim 88 (previously presented): An apparatus according to claim 87, wherein a detection means Di situated behind a pinhole Pi has a curved surface, such that the

radiation from pinhole Pi will on average have a more perpendicular line of incidence onto each part of the detection means Di.

Claim 89 (previously presented): An apparatus according to claim 88, wherein the cavity wall may be arranged to be replaceable by another cavity wall comprising other dimensions and/or other patterns of pinholes and/or pinholes with other dimensions.

Claim 90 (previously presented): An apparatus according to claim 63, wherein the blocking wall may be arranged to be replaceable by another blocking wall comprising other dimensions and/or other patterns of openings and/or openings with other dimensions.

Claim 91 (currently amended): An apparatus according to claim 3, wherein the distance between ~~neighbouring~~ neighboring planes is not smaller than 0.03 and preferably 0.05 times the distance between ~~neighbouring~~ neighboring pinholes within any of such planes.

Claim 92 (currently amended): An apparatus according to claim 2, wherein the distance between ~~neighbouring~~ neighboring planes is 0.03-0.98 and more preferably 0.05- 0.77 times the distance between ~~neighbouring~~ neighboring pinholes within any of such planes.

Claim 93 (currently amended): An apparatus according to claim 3, wherein the pitch of the helix is not smaller than 0.03 and preferably 0.05 times the distance between ~~neighbouring~~ neighboring pinholes laying on the helix.

Claim 94 (currently amended): An apparatus according to claim 2, wherein the pitch of the helix is 0.03-0.98 and more preferably 0.05- 0.77 times the distance between ~~neighbouring~~ neighboring pinholes laying on the helix.

Claim 95 (previously presented): An apparatus according to claim 78, wherein at least one of the baffles is retractable so that, in use, the retracted baffle will not be illuminated by the radiation from the cavity.

Claim 96 (new): An apparatus for obtaining a tomographic image of a human being or part of a human being or an animal or a part thereof using radioactive radiation, which apparatus comprises a measuring cavity which may have an axial axei, a cavity wall which may at least partly surround the measuring cavity which cavity wall is provided with a plurality of pinholes, the apparatus further comprising detection means which viewed from the measuring cavity, are provided behind the pin holes, wherein the detection means are arranged for in a position-dependent manner the detection of radioactive radiation emitted within the measuring cavity wherein the detection means can be read electronically or optically, wherein the apparatus is further provided with radiation blocking means which partly block radiation which travels from the measuring cavity through at least one of the pinholes to the detection means such that the radiation which is detected by the detection means lays in a limited solid angle relative to the at least one pinhole, which angle is smaller than the solid angle which would have been

obtained without the radiation blocking means, wherein the radiation blocking means comprises baffles and wherein the baffles are located outside the measuring cavity.

Claim 97 (new): An apparatus for obtaining a tomographic image of a human being or part of a human being or an animal or a part thereof using radioactive radiation, which apparatus comprises a measuring cavity having an axial axis, a cavity wall which at least partly surrounds the measuring cavity which cavity wall is provided with a plurality of pinholes, the apparatus further comprising detection means which viewed from the cavity, are provided behind the pin holes, wherein the detection means are arranged for receiving, in a position-related manner, the radioactive radiation emitted within the measuring cavity and wherein the detection means can be read electronically or optically, wherein:

-the pinholes are at least substantially arranged in a plurality of flat planes which planes are at least substantial parallel and separated in the direction of the axial axis relative to each other wherein the distance between neighboring planes is smaller than the distance between neighboring pinholes within any of such planes, and wherein the distance between neighboring planes is 0.03-0.98 and more preferably 0.05- 0.77 times the distance between neighboring pinholes within any of such planes.

Claim 98 (new): A method of obtaining a tomographic image of part of an animal or a part of an animal including a human being or a part of a human being by using radioactive radiation, wherein the animal is at least partly placed into a measuring cavity having an axial axis, the measuring cavity being at least partially surrounded by a cavity

wall which is provided with a plurality of pinholes, and wherein behind the pin holes (as viewed from the measuring cavity or lumen) detection means are placed, radioactive radiation from a radioactive isotope administered to the animal is detected in a position-related manner by the detection means and data obtained with the detection means are used for the generation of the tomographic image, wherein:

- the pinholes are at least substantially arranged in a plurality of flat planes which planes are at least substantially parallel and separated in the direction of the axial axis relative to each other wherein the distance between neighboring planes is smaller than the distance between neighboring pinholes within such a plane and,

  wherein the distance between neighboring planes is 0.03-0.98 and more preferably 0.05- 0.77 times the distance between neighboring pinholes within any of such planes.

Claim 99 (new): A method of obtaining a tomographic image of part of an animal or a part of an animal including a human being or a part of a human being by using radioactive radiation, wherein the animal is at least partly placed into a measuring cavity having an axial axis, the measuring cavity being at least partially surrounded by a cavity wall which is provided with a plurality of pinholes, and wherein behind the pin holes (as viewed from the measuring cavity or lumen) detection means are placed, radioactive radiation from a radioactive isotope administered to the animal is detected in a position-related manner by the detection means and data obtained with the detection means are used for the generation of the tomographic image, wherein:

- the pinholes are at least substantially arranged along a helix wherein the pitch of the helix is generally smaller than the distance between neighboring pinholes laying on the helix; and wherein the pitch of the helix is 0.03-0.98 and more preferably 0.05- 0.77 times the distance between neighboring pinholes laying on the helix.

Claim 100 (new): A method of obtaining a tomographic image of part of an animal or a part of an animal including a human being or a part of a human being by using radioactive radiation, wherein the animal is at least partly placed into a measuring cavity having an axial axis, the measuring cavity being at least partially surrounded by a cavity wall which is provided with a plurality of pinholes, and wherein behind the pin holes (as viewed from the measuring cavity or lumen) detection means are placed, radioactive radiation from a radioactive isotope administered to the animal is detected in a position-related manner by the detection means and data obtained with the detection means are used for the generation of the tomographic image, wherein:

-the pinholes are at least substantially arranged along a helix wherein the pitch of the helix is generally smaller than the distance between neighboring pinholes laying on the helix, wherein the pitch of the helix is 0.03-0.98 and more preferably 0.05- 0.77 times the distance between neighboring pinholes laying on the helix.